

some answers to the talk - next steps

10/01

questions

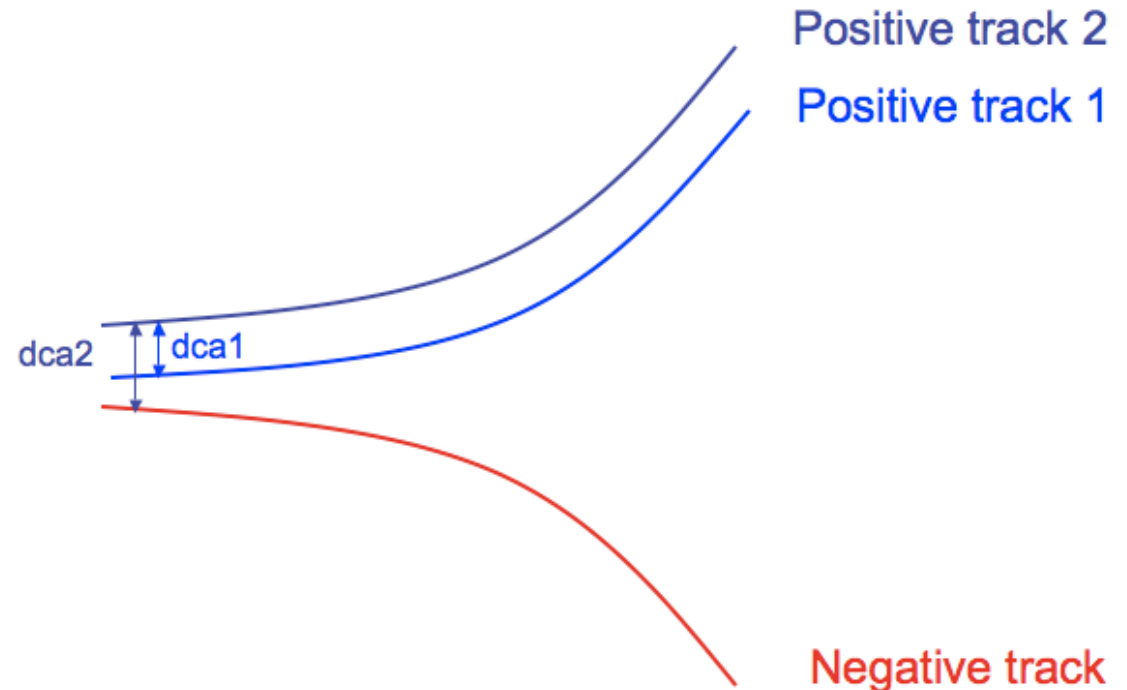
- what we have to adress :
 - ➡ if D0 mix sample can be compared with real data (ie #D0's per event)
 - ➡ number of events used , D0's found when we run the macro
 - ➡ Efficiency of Silicon hits : basically plot inv. mass with and without Si hits
 - ➡ do a direct fit (polynomial or exponential) instead of the rotation
 - ➡ improve dEdx cuts

next steps

- dca cut :
 - ➡ for this, plot $\sigma_{\text{dca}}^{xy,z}$ for positive and negative daughter vs momentum
 - ➡ apply a cut on $\Delta\text{dca} = \text{dca}_{\text{pos}} - \text{dca}_{\text{neg}}$ and apply a cut based on $\sigma_{\text{dca}}^{xy,z}$ (see next slide)
- apply default cuts (phi, eta, NTPchits) and fixed them because TNuple has a huge size

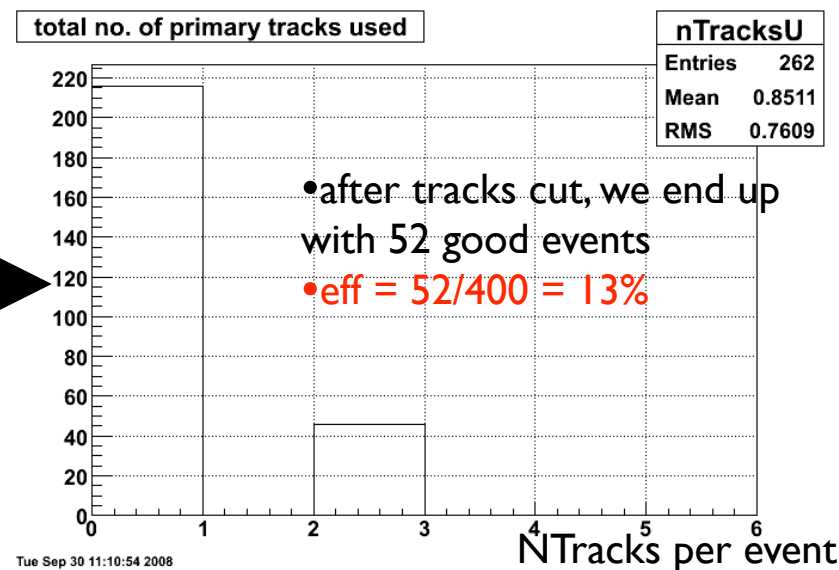
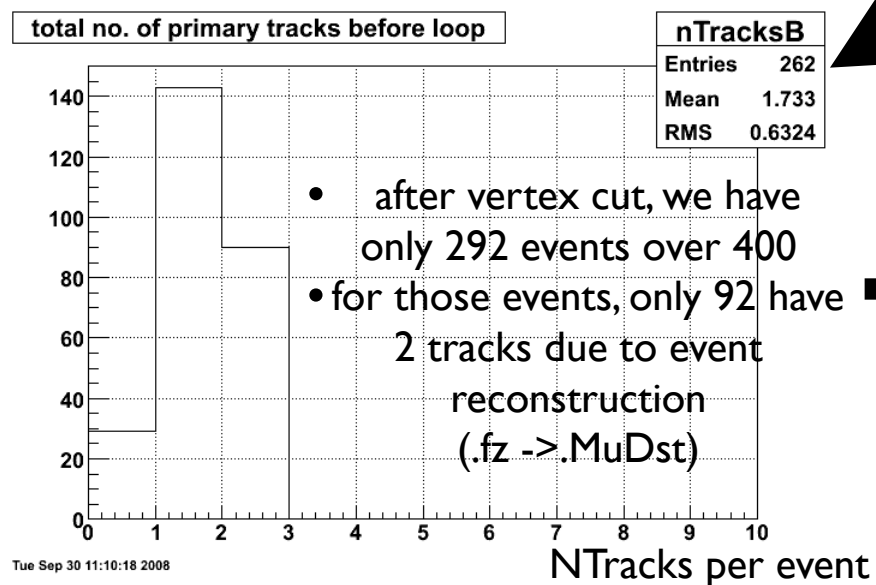
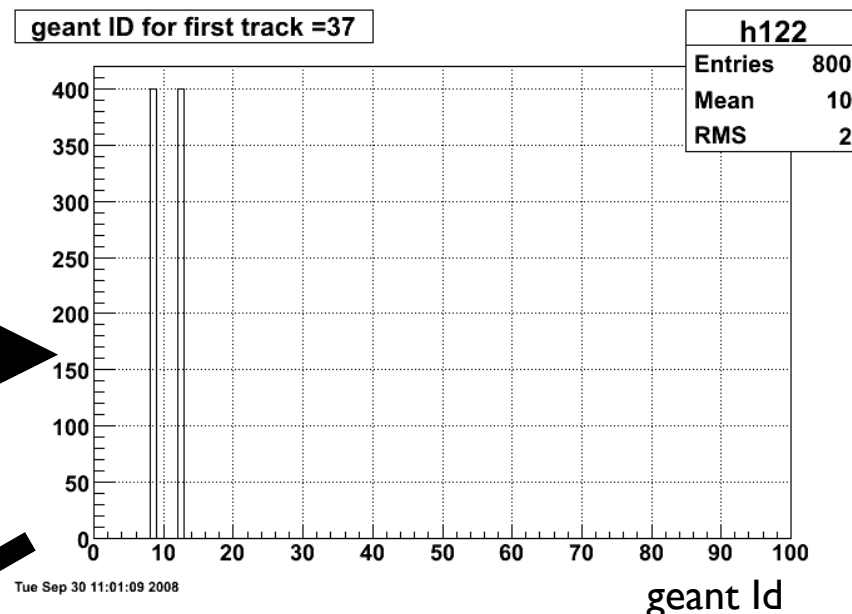
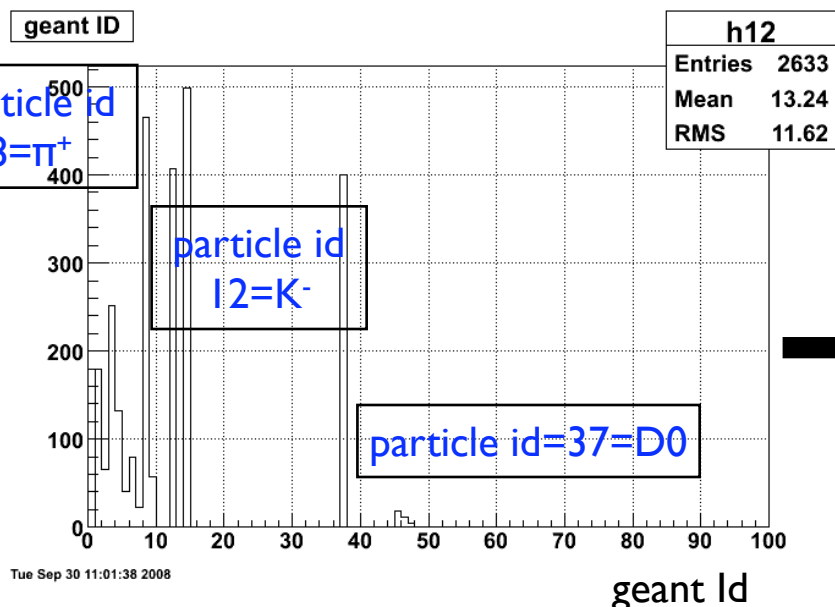
Distance of Closest Approach

- During track association, do a selection of positive and negative track with respect their dca , in order to remove fake association
- $\Delta dca = dca_{pos} - dca_{neg}$



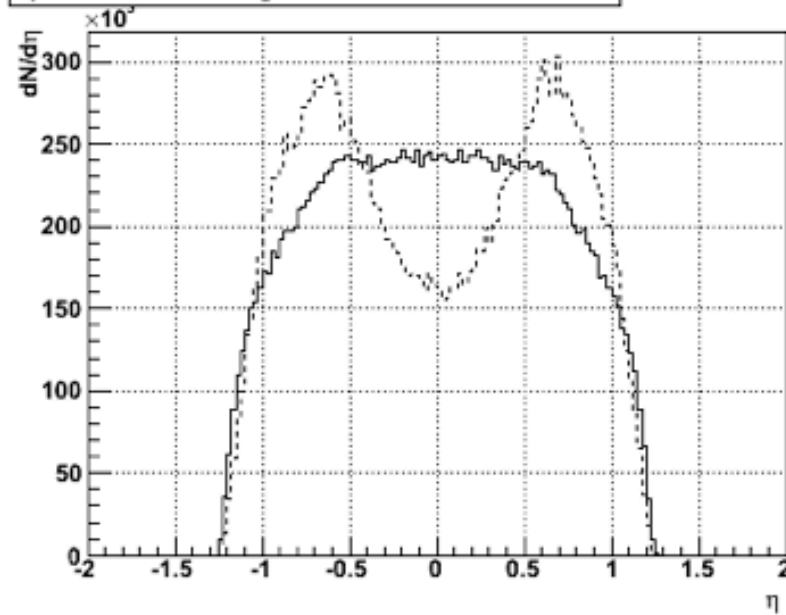
Rough efficiency

- we have 950 files*400 D0's = 380000 possibles D0's (pure sample)
- next plots : for 1 file (400 D0's possibles)

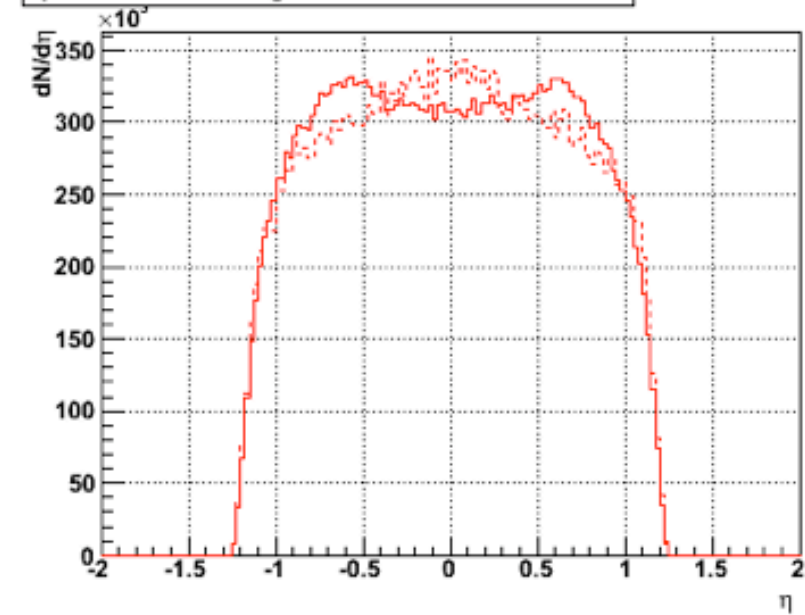


η cut that has to be fixed if using Si hits

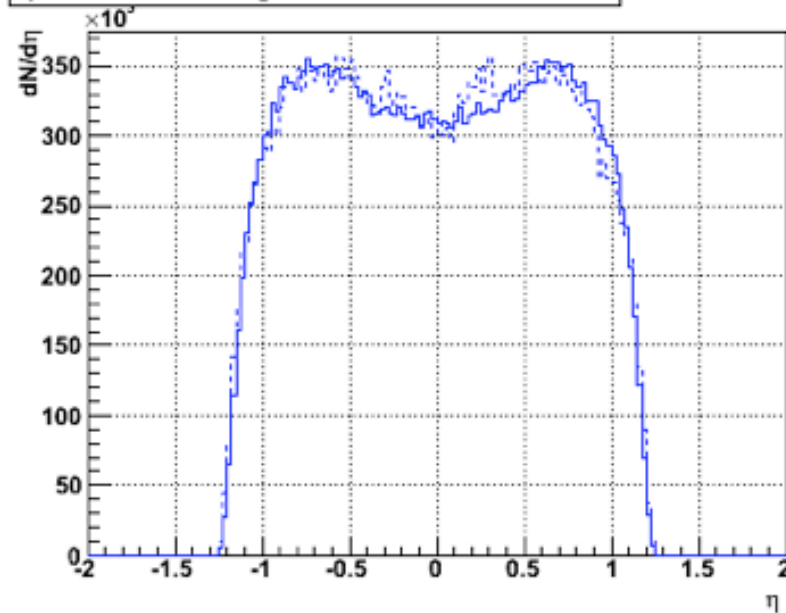
η distribution of neg tracks for No. Svt+Ssd = 1



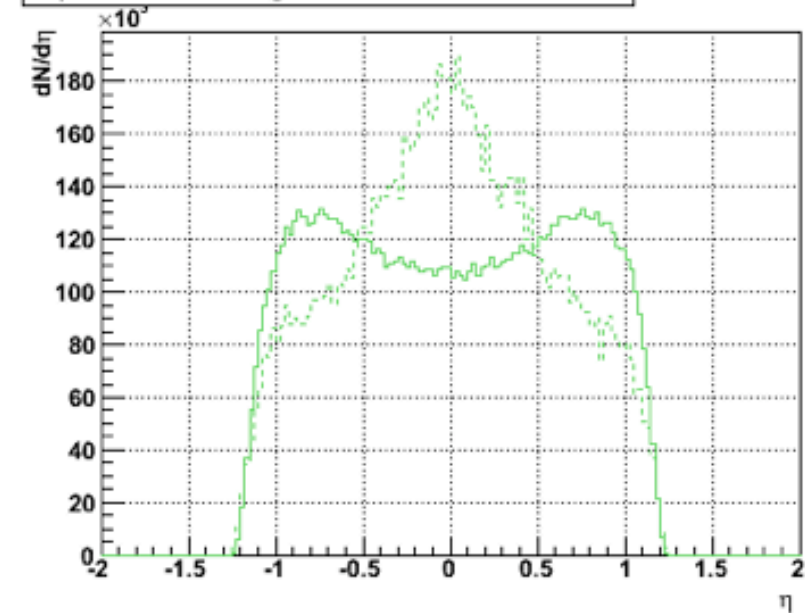
η distribution of neg tracks for No. Svt+Ssd = 2



η distribution of neg tracks for No. Svt+Ssd = 3

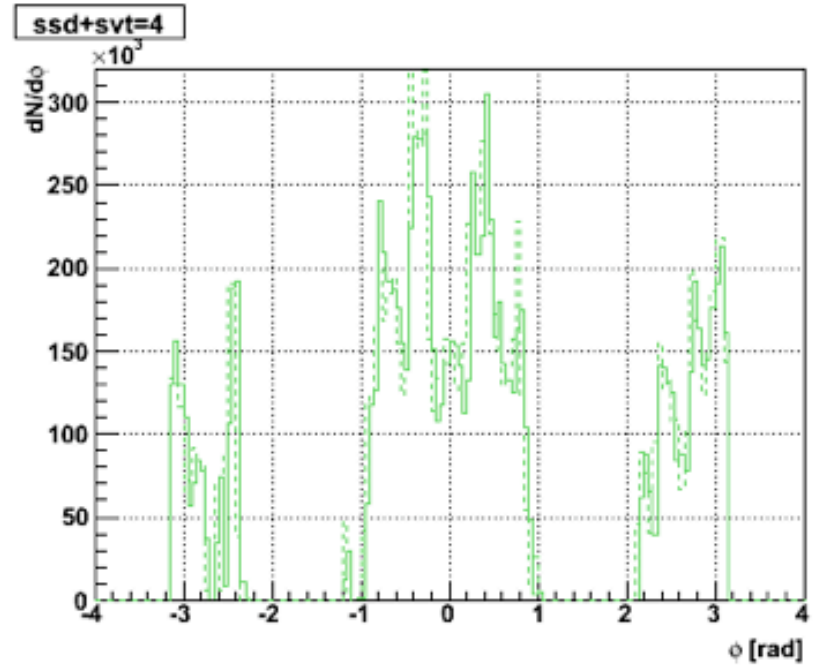
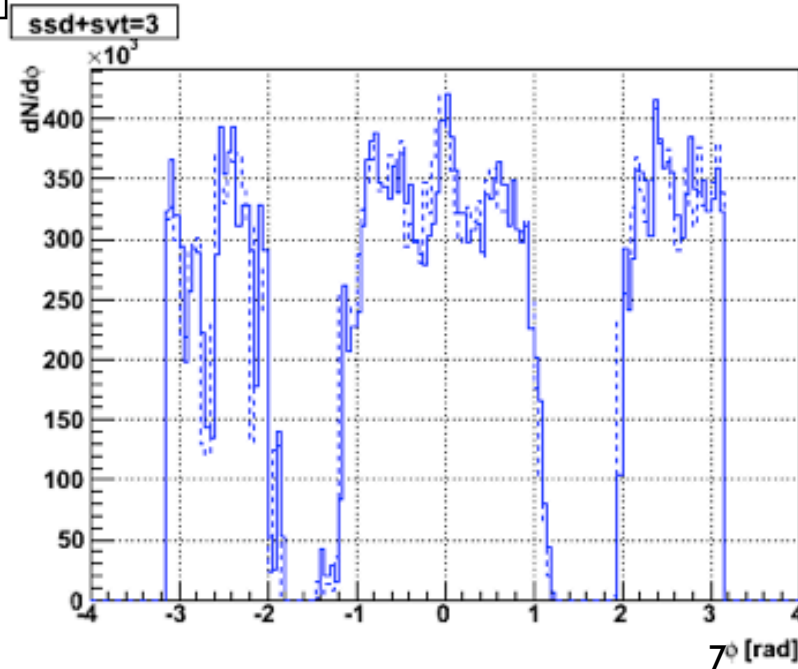
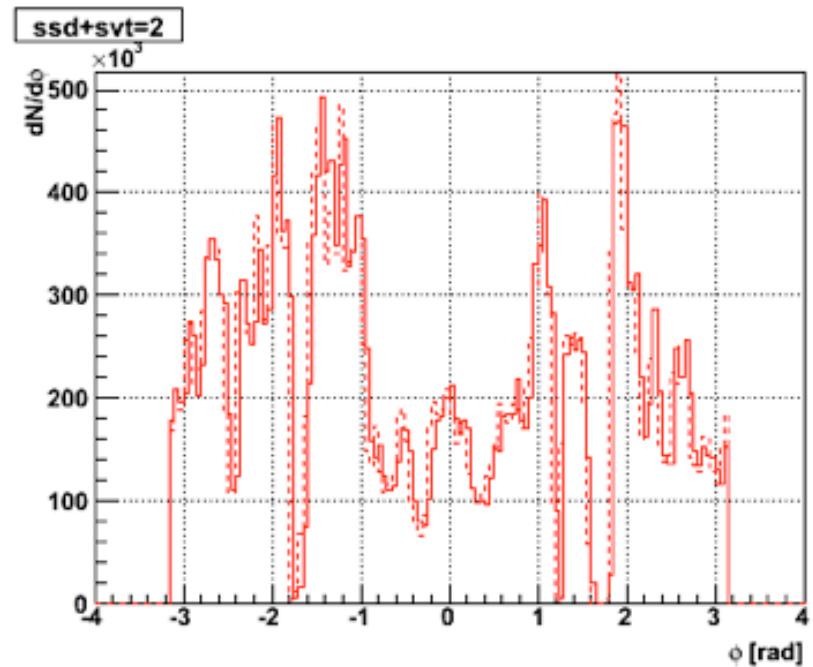
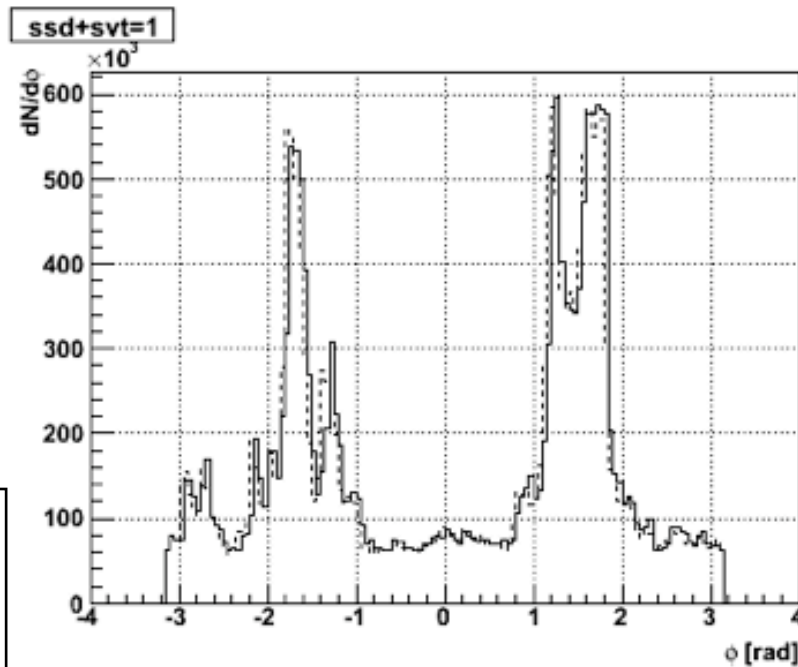


η distribution of neg tracks for No. Svt+Ssd ≥ 4



solid line : positive daughter
dash line : negative daughter

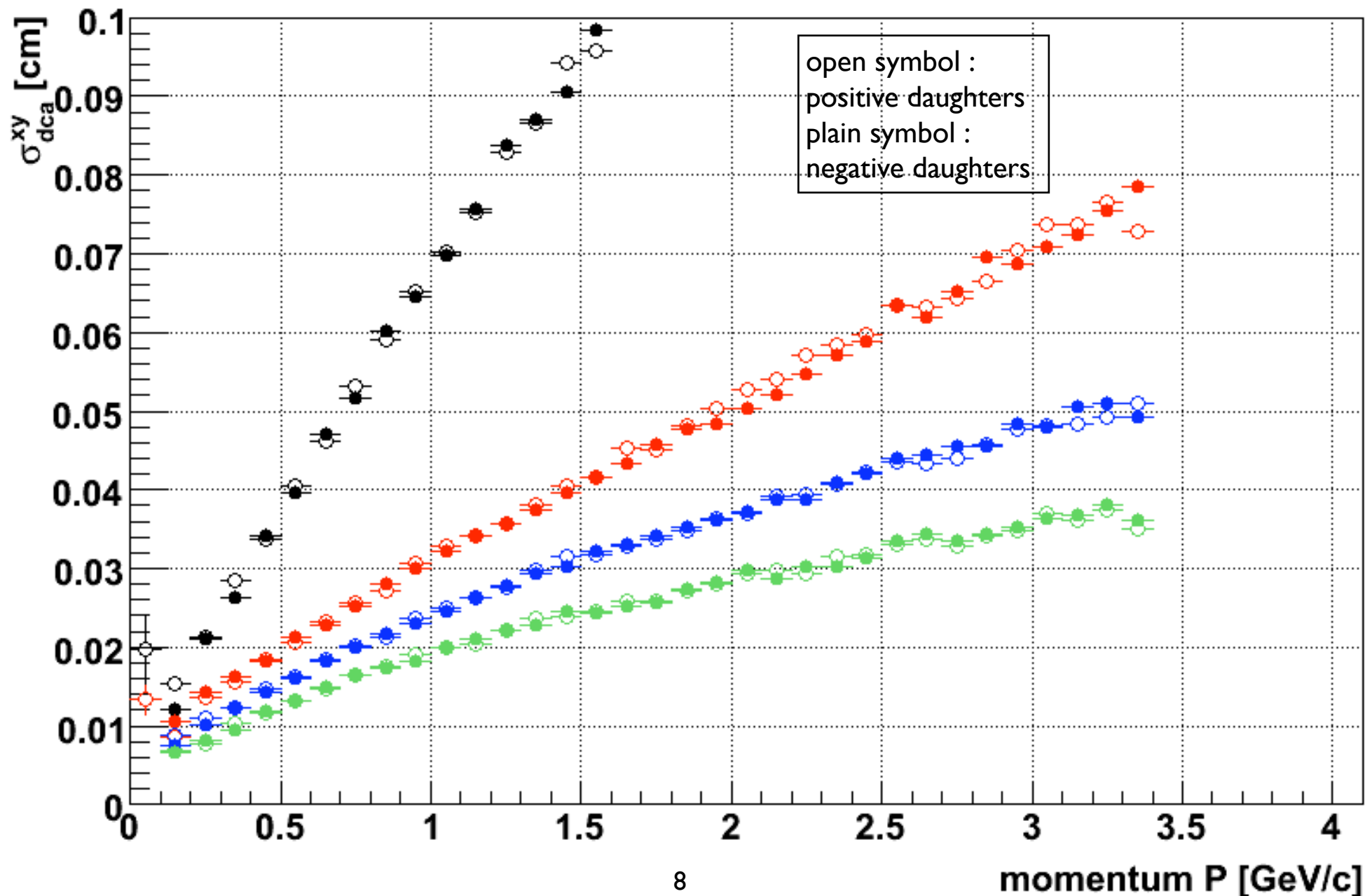
φ cut that has to be fixed if using Si hits



solid line : positive
daughter
dash line : negative
daughter

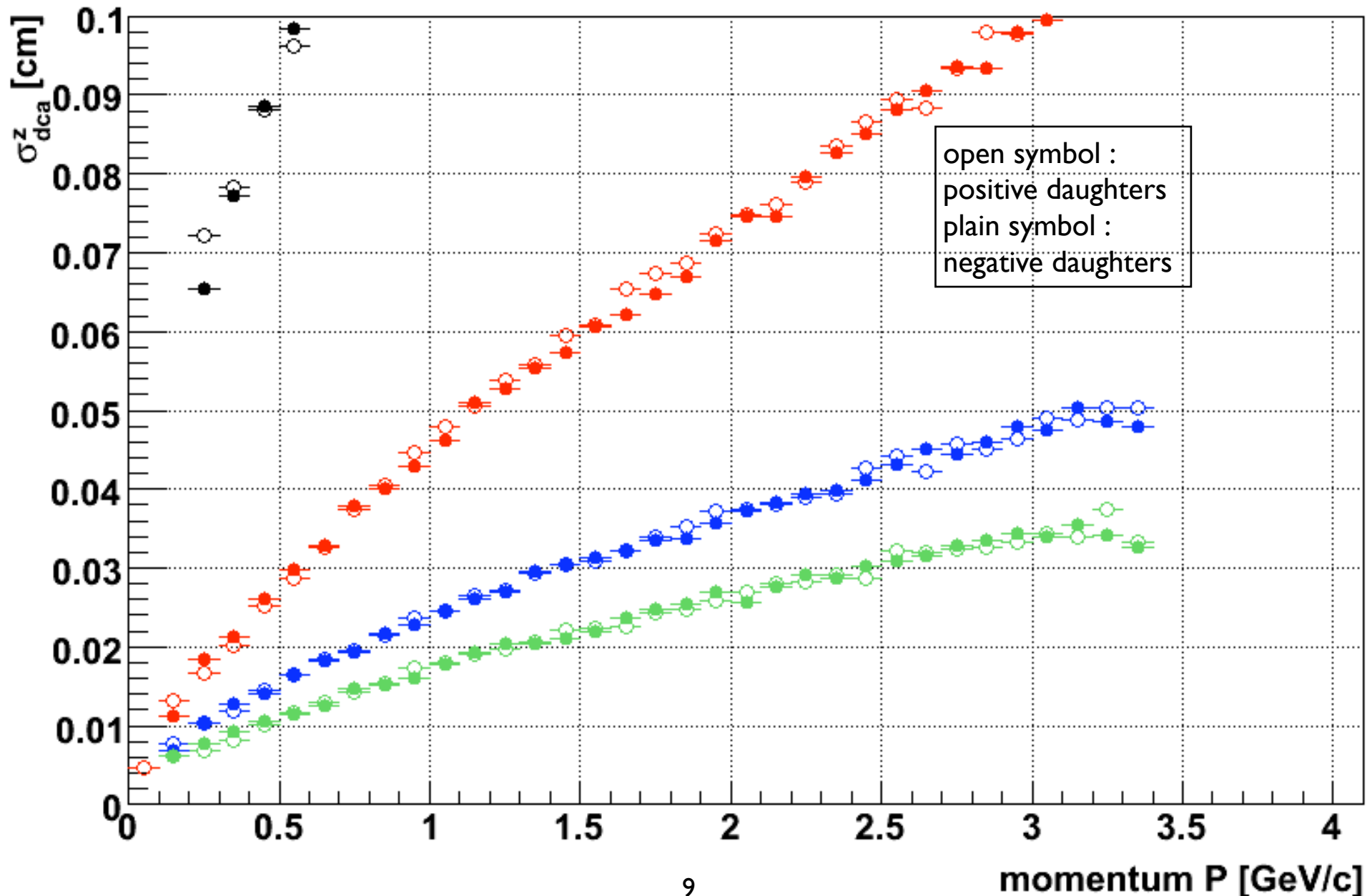
σ_{dca}^{xy} that can be used if using Si hits

Fitted value of par[2]=Sigma



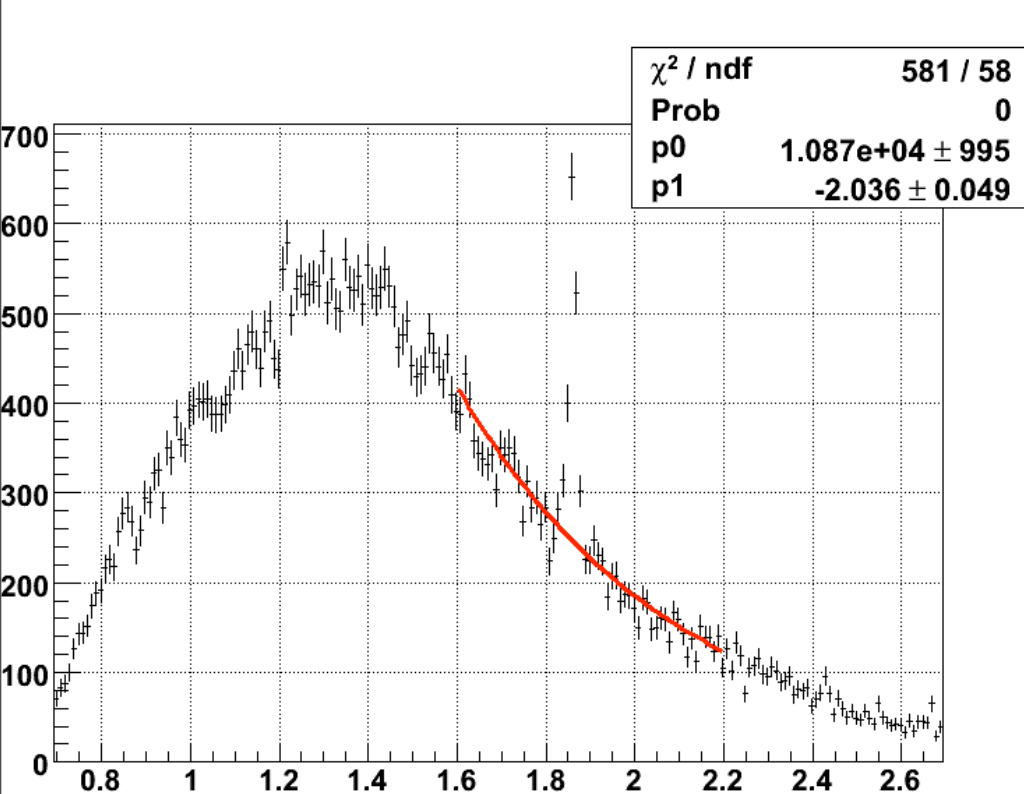
σ_{dca}^z that can be used if using Si hits

Fitted value of par[2]=Sigma

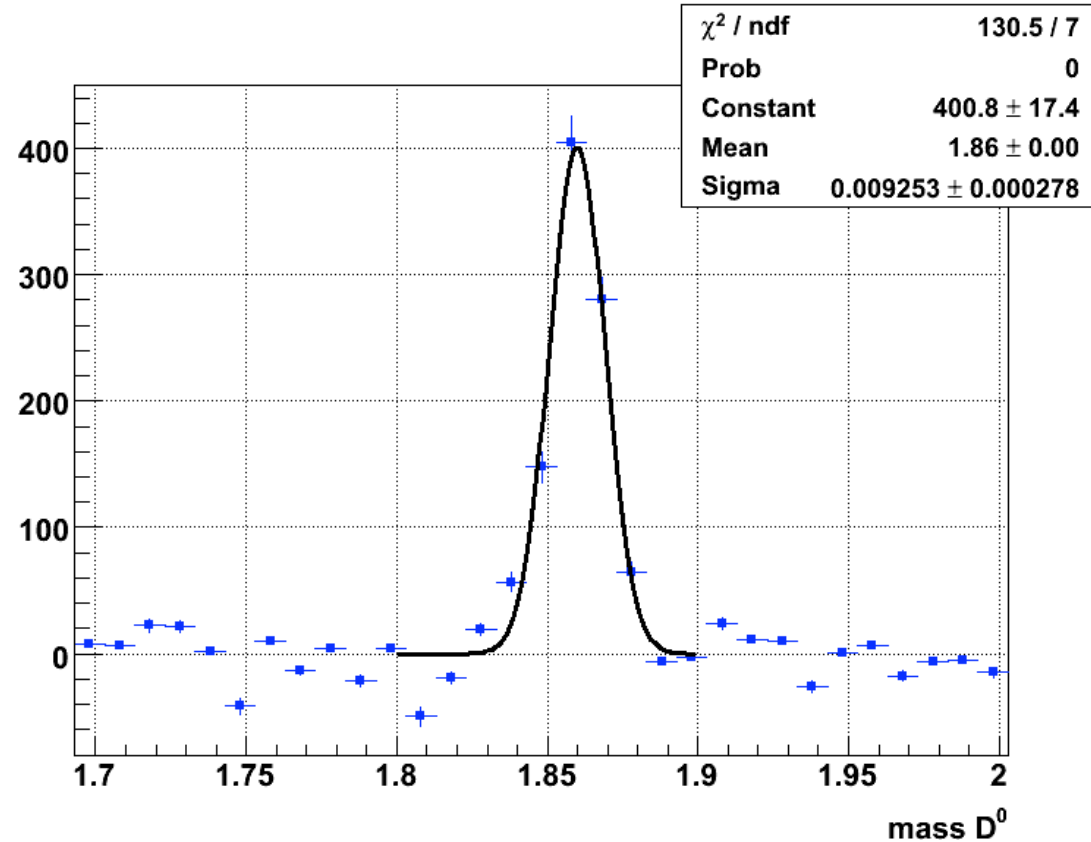


Fit exponential

- positive and negative with less than 3 Silicon hits



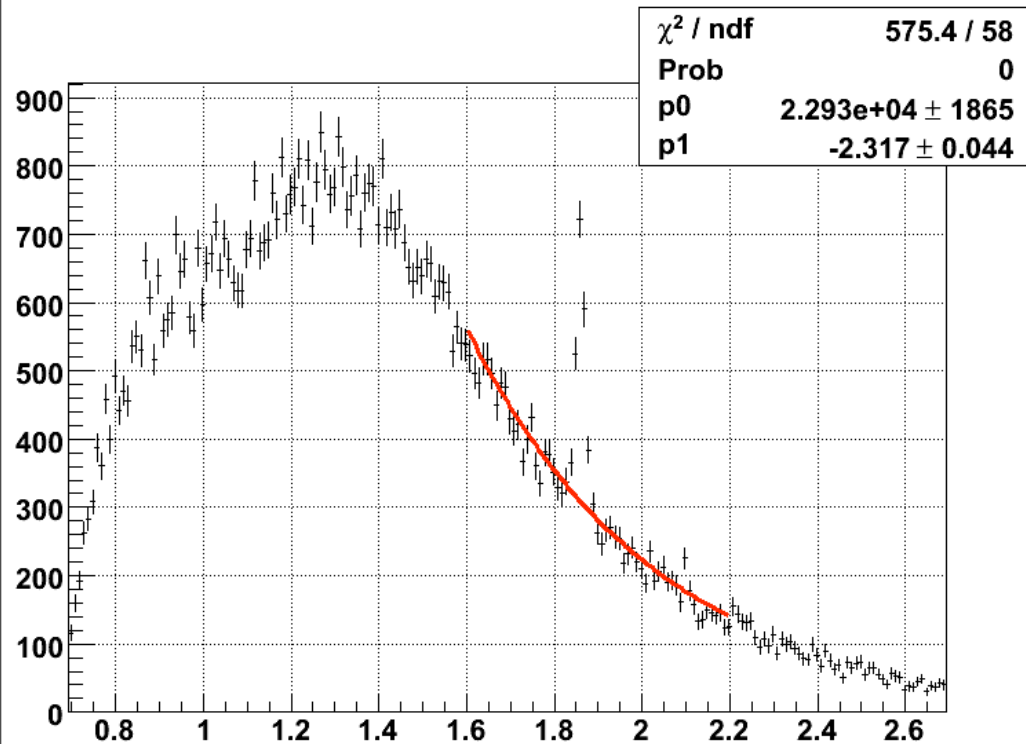
exponential fit
 $p0 * \exp(p1 * x)$



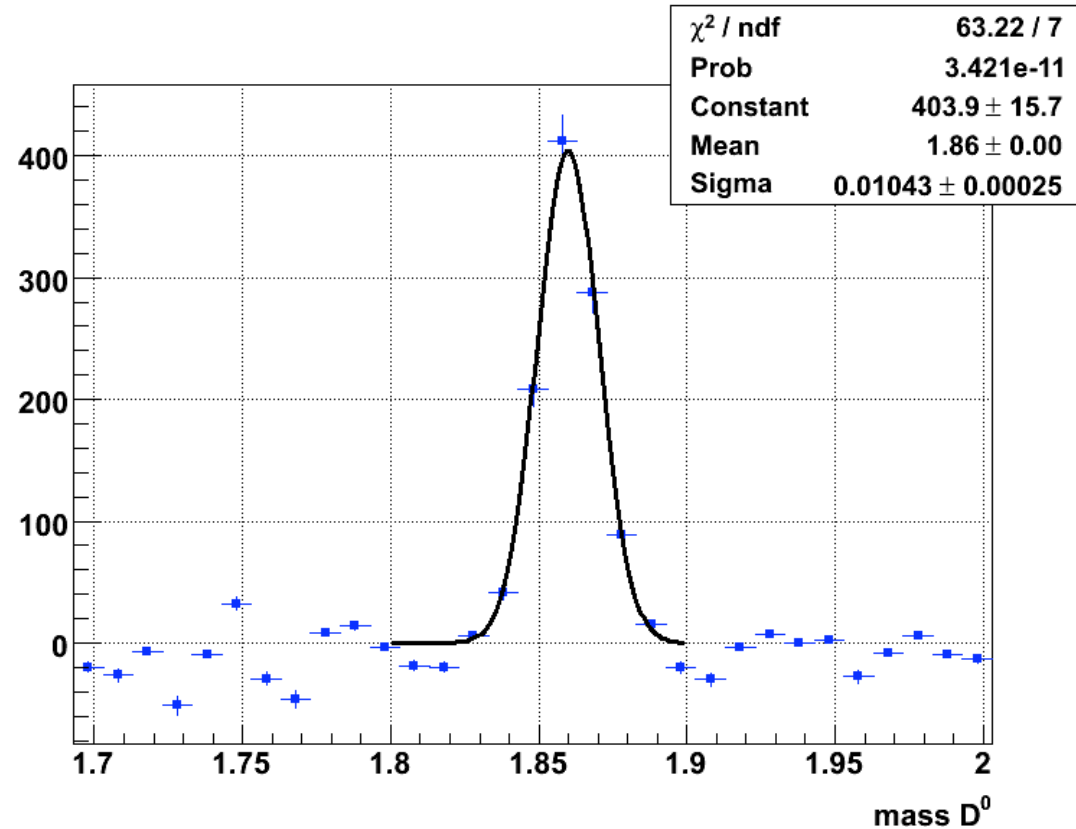
gaussian fit

Fit exponential

- positive and negative with more (or) than 3 Silicon hits



exponential fit
 $p0 * \exp(p1 * x)$



gaussian fit